

# Exploration and Research on the Training Mode and Curriculum System of Nursing Professionals in Higher Vocational Colleges from the Perspective of "1 + X"

Weihong Li\*, Liping Yang, Fengyun Wang

School of Nursing, Henan Technical Institute, Zhengzhou 450042, China

\*Corresponding Author.

## Abstract:

This paper explores a new training mode of nursing professionals suitable for 1 + X certificate system. This paper focuses on the realization of the training goal of compound skilled nursing talents with "one specialty and multiple abilities". Firstly, this paper takes the "1 + X" certificate standard as the basis for the construction of nursing specialty, and reconstructs the talent training scheme of "documentary evidence integration". Secondly, this paper takes the content of "1 + X" certificate as the basis of professional curriculum construction, and constructs the professional core curriculum system of "curriculum certificate integration". This paper explores how to build a "new double qualified" teaching staff and speed up the construction of high-quality resources. The results of this study show that at this stage, nursing education should build a talent training mode of "documentary evidence integration" under the 1 + X certificate system. The method proposed in this paper can optimize the course structure and realize the teaching effect of "course certificate integration". This method improves teachers' ability of "teaching, training and testing". The new training mode of nursing professionals under the 1 + X certificate system meets the synchronous peers of "1" academic education and "X" vocational training of nursing students, realizes the seamless connection between "1" and "X", and provides innovative ideas for the promotion and implementation of the pilot work of 1 + X certificate system in the field of national nursing education.

**Keywords:** 1+X Certificate System, Nursing Professionals, Training Mode, Teaching Methods.

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## I. INTRODUCTION

On January 24, 2019, the State Council issued the implementation plan of national vocational education reform (the state proposed to start the pilot work of "academic certificate + several vocational skill level certificates" (hereinafter referred to as 1 + X certificate) system in Vocational Colleges and applied undergraduate colleges from 2019 [1]. Actively recruit and promote vocational education and training evaluation, organize high-quality enterprises in social service industry and vocational colleges to jointly develop vocational skill level standards and certificates in scarce fields such as domestic service, elderly care service and maternal and infant care, and develop teaching materials and learning resources. Support

college students to actively obtain relevant vocational skill level certificates in the field of shortage while obtaining academic certificates, improve their employment and entrepreneurship skills and promote high-quality employment [2]. Taking the lead in carrying out the pilot of 1 + X certificate system in the fields of domestic service, elderly care service and nursery service, and exploring the construction of a national credit bank for vocational education at the same time is important to nursing education.

After the registration of qualified colleges and universities by the Department of education of Henan Province and the summary and evaluation of the Institute of Vocational and technical education center of the Ministry of education, our school has been successfully selected as the pilot colleges with four types of vocational skill level certificates: mother and child care, care for the mentally retarded elderly, elderly care and child care. In the same year, our university started the construction of "double high" and listed the health service professional group as the key construction project. The health service professional group mainly includes nursing, midwifery, elderly health care and management. According to the commonness of these majors, the professional group team has conducted in-depth enterprise research for many times and determined to take the "1 + X" certificate as the starting point to focus on promoting the development of certificates for mother and child care, the mentally retarded elderly, elderly care and child care in the professional nursing group.

Different majors have different certificates: the certificates obtained by nursing students after graduation include: 1 (academic certificate) + X (nurse qualification certificate, care for the elderly with dementia, elderly care, mother and child care). That is, one specialty and six certificates. The certificates obtained by midwifery students after graduation include: 1 (academic certificate) + X (nurse qualification certificate, mother and child care, child care, midwife). That is, one specialty and five certificates. The certificates obtained by students majoring in geriatric nursing and management after graduation include: 1 (academic certificate) + X (Dementia Elderly Care, geriatric nursing care, health manager). That is, one specialty and four certificates. In order to better complete this work, combined with the students' own characteristics and based on the 1 + X certificate, we put forward the talent training mode of "platform sharing, module diversion and project penetration" in the professional group. At the same time, we reformed the curriculum system of the professional group, so that students can independently choose their professional direction according to their interests and hobbies, and change what they want to learn for me.

The 1 + X certificate system will bring about the reform of education and teaching management mode. The talent training mode and teaching management system such as modular teaching, credit system and flexible school system will emerge in the pilot work. These new changes will have a major challenge and serious impact on the current school running mode and education and teaching management mode of vocational education. How to adapt to the 1 + X certificate system and adjust the talent training mode is a major issue in front of in-service colleges and universities. After the first batch of pilot work, some colleges and universities have reformed the talent training mode of accounting, automobile and software technology related majors, which can be used as a reference for nursing related majors. Because maternal and infant health care and dementia elderly care are the second batch of 1 + X certificates, and elderly care and child care are the third batch of 1 + X certificates. At present, there is no complete talent training program, which is in urgent need of exploration, research and practice.

## II. CLINICAL RESEARCH

Nursing education is an important part of modern medical education. The results of nursing teaching directly affect the level of modern medical education in China. Clinical nursing teaching is the last stage of nursing interns' school education [3]. This stage of teaching can combine the theoretical knowledge learned by nursing interns with clinical nursing work. At this stage, nursing students can improve nursing cognition, improve working ability and go to work smoothly as soon as possible.

Pediatric basic nursing and therapeutic nursing are highly professional, and the nursing task is arduous. Pediatric patients are a special group [4-5]. Most of them can't self describe their condition or express accurately, and their cooperation is poor. The families of children have tension and anxiety about nursing treatment, and the relationship between nurses and patients is becoming increasingly tense, which leads to the difficulty of pediatric nursing treatment [6]. Therefore, nursing students may face more complex problems in pediatric clinical practice, which is unfavorable to their subsequent practice and work [7]. This requires clinical teaching teachers to provide a teaching method, which can restore the pediatric working scene to the greatest extent, so that nursing students can carry out situational exercises repeatedly. In repeated situational exercises and learning, nursing students can master the working characteristics, operation skills, communication skills and mutation handling of pediatric nursing, realize the sense of participation and self-worth of nursing students, and mobilize the learning enthusiasm and initiative of pediatric clinical nursing students [8]. Video feedback teaching method can help students better grasp the details and key points of knowledge of actions in a variety of sensory forms such as vision, hearing and representation [9-10]. Repeated video playback can help students better understand the key points of operation and knowledge difficulties, facilitate the mastery of knowledge and operation skills, give students a sense of achievement, and improve students' learning interest, enthusiasm and initiative.

### 2.1 Research object and method

A total of 119 clinical nursing interns in the Department of pediatric neurology in a class III class a hospital in Shandong Province from July 1, 2017 to February 28, 2018 were selected as the research objects. The interns who met the inclusion criteria were divided into observation group and control group by random grouping method. The general data of interns, age, gender, educational background and theoretical achievements were collected. There was no significant difference, so they can be compared. The teaching of the observation group and the control group during the pediatric internship was based on the 5th edition of basic nursing edited by Li Xiaohan and the 5th edition of pediatric nursing edited by Cui Yan. The theory and operation teaching of the two groups of students were completed by the researcher and two teaching teachers. The two groups of students used the same syllabus, teaching plan, number of class hours, teaching objectives and teaching progress. During the teaching of the students in the observation group, all the teaching contents will be recorded.

### 2.2 Implementation steps of video feedback method combined with situational simulation teaching method

#### Observation group:

(1) Theory Teaching: the teacher will explain relevant knowledge according to the formulated teaching plan and outline.

(2) Practical teaching: Step 1: script drill (60 minutes). Step 2: mutual evaluation (20 minutes). Step 3:

(10 minutes) teacher evaluation summary.

(3) Video the whole teaching process and copy the video to students after class to ensure that students can watch the teaching video anytime and anywhere. Students are required to refer to the teaching video for operation practice and theoretical learning after class, review and analyze the video, find out their mistakes and deficiencies through the video, consult the teacher at any time after class, and submit written records and practice videos every week.

Control group: the students in this group only take the above scenario simulation teaching, do not record the teaching process, and can ask the teacher for advice at any time after class.

### 2.3 Research tool

Active learning ability scale: this scale was developed by Zang Yuli and others in 2006. It is aimed at medical and related majors, mainly to evaluate students' learning initiative. The items of active learning ability scale include learning driving force, learning goal, in-depth learning, controlled learning and solid learning, with a total of 21 items. The expert content validity index and rater consistency of the scale are 0.861, and the overall reliability coefficient of internal consistency  $\alpha$  is 0.895. The learning initiative scale is divided into multiple dimensions, with 15 points for each question.

Teaching effect evaluation scale: the scale is designed by the researchers themselves. The researchers have consulted a large number of literature at home and abroad, studied and analyzed it, and formulated it in combination with the actual clinical situation. The evaluation scale makes statistics on 18 aspects, such as improving interest in nursing learning, discovering weak points of knowledge in time, improving self-learning ability, improving teamwork ability and enhancing humanistic care.

### 2.4 Data collection

Collection of theoretical scores: two groups of students were given a theoretical test on Friday in the fourth week. Both groups of students took a closed book test. The full score of the theoretical score was 100 and the test time was 90 minutes. The test questions were randomly selected by the teaching teacher in the question bank of the Department, and the two teaching teachers scored anonymously according to the standard answers.

Collection of practical results: two groups of students were given a practical examination on the fourth week and Friday. The examination questions were randomly selected from the four scripts formulated by the hospital. The examination scoring standard was in accordance with the operation standard formulated by the hospital, and the examination results were scored with the mini clinical exercise rating scale.

Evaluation of active learning ability: the active learning ability of nursing students was evaluated after the examination on the fourth week and Friday. The questionnaire was distributed by three teaching teachers. After the students answered the questionnaire collectively within 20 minutes, the teaching teacher took it back on the spot. In the observation group, 61 questionnaires were distributed, 61 questionnaires were recovered, the recovery rate was 100%, 61 valid questionnaires, and the effective rate was 100%; In the control group, 58 questionnaires were distributed, 58 questionnaires were recovered, the recovery rate was 100%, 58 effective questionnaires, and the effective rate was 100%.

### 2.5 Statistical analysis

SPSS17.0 software was used for statistical analysis of the data, and the counting data was expressed in percentage and chi square test was performed; The measurement data were expressed by mean  $\pm$  standard deviation, and the independent two sample t-test was used for the comparison between groups. The

difference was statistically significant ( $P < 0.05$ ).

## II. Result

### 2.1 Comparison of grave book data between two groups of students

Descriptive statistics and independent sample t-test were carried out on the age and theoretical achievement of the two groups when entering the hospital, and chi square test was carried out on the gender. The results showed that there was no statistical difference between the two groups. Age ( $t = 1.318$ ,  $P > 0.05$ ), achievement ( $t = 1.017$ ,  $P > 0.05$ ), gender ( $\chi^2 = 0.052$ ,  $P > 0.05$ ). See Table 1 for details.

**TABLE I. Comparison of basic situation between observation group and control group**

	Number of people (n)	Gender		Age (years)	Score (points)
		Male	Female		
Observation group	61	55	6	23.05±1.517	78.13±7.97
Control group	58	53	5	23.11±1.493	77.35±8.17
t value between groups				1.318	1.017
$\chi^2$		0.052			
P		0.819		0.185	0.419

### 2.2 Comparison of theoretical scores

Descriptive statistics and independent sample t-test were carried out on the theoretical scores. The results showed that the scores of the students in the observation group were higher than those in the control group, indicating that there were significant differences in the theoretical scores between the two groups ( $t = 5.081$ ,  $P < 0.01$ ). The statistical analysis results are shown in Table 2.

**TABLE II. Comparison of theoretical examination results between observation group and control group**

Group	Number of people (n)	Fraction	t	P
Observation group	61	87.51±6.443	5.081	0.003
Control group	58	81.87±5.471		

### 2.3 Comparison of learning initiative scale

Descriptive statistics and independent sample t-test were carried out on the scores of the two groups. The results showed that the observation group was higher than the control group in various ability indexes, and there was significant difference between the two groups ( $P < 0.001$ ). See Table 3 for details

**TABLE III. Comparison of theoretical examination results between observation group and control**

**group**

Capability index	Observation group	Control group	t	P
Learning driving force	16.51±2.452	10.15±1.513	15.223	<0.001
Learning objectives	15.31±1.884	9.14±2.118	17.194	<0.001
In depth learning	13.18±1.024	9.35±2.109	8.193	<0.001
Control learning	13.21±2.421	10.79±1.991	8.064	<0.001
Solid learning	13.91±2.738	10.18±1.893	7.984	<0.001
Learning initiative	75.96±5.991	47.25±3.19	22.051	<0.001

**III. DISCUSS**

**3.1 Influence of video feedback combined with situational simulation teaching on students' clinical skills**

A qualified clinical worker should not only have a solid theoretical foundation, but also have professional and comprehensive clinical skills. The mini clinical exercise evaluation scale can comprehensively investigate the operation ability of nursing students. Through this study, it is found that video feedback combined with situational simulation teaching can comprehensively improve the clinical operation skills of pediatric nursing students. Although situational simulation teaching can integrate humanistic care and on-site problem-solving ability, many scholars have found that situational simulation teaching method has a positive impact on improving nursing students' operation skills, communication skills, humanistic care, nursing evaluation quality and on-site problem-solving ability. However, the reproduction of its clinical scene is short. With the end of the teaching, students can only practice with their own memory and written notes. Although the teacher gives regular guidance, it is difficult to restore the original clinical simulation scene again, lacking the unity of practice standards. The combination of the two teaching methods can repeatedly and accurately present the drill process in front of students, make the standard highly unified, and make it easier for students to master the core of operation. And in the process of operation drill, it can better integrate other abilities that teachers want to teach, such as communication ability, humanistic care and thinking ability, into the operation, so as to improve students' comprehensive ability.

**3.2 The influence of video feedback combined with situational simulation teaching on students' learning initiative**

It can be seen from table 3 that the comparison between the two groups of students in learning driving force, learning objectives, in-depth learning, controlled learning and solid learning shows that the data difference between the observation group and the control group is statistically significant ( $P < 0.001$ ). It can be seen that video feedback combined with situational simulation teaching mode can more effectively improve the learning initiative of pediatric nursing students. Situational simulation teaching mode can well restore the clinical work scene, integrate the theory into clinical application, give more independent time to students, and students actively consult materials, analyze problems, communicate and ask questions. Let



students change from passive receivers to active explorers, so as to stimulate students' interest and initiative in learning. The third link in the process of autonomous learning is strategy implementation and monitoring, that is, students use a strategy in a structured situation, or students monitor its accuracy in the process of implementation. The effective means to ensure the accuracy or accuracy of the strategy is to provide correct and standard strategy basis at any time.

### 3.3 The influence of video feedback combined with situational simulation teaching on students' critical thinking ability

Critical thinking refers to the individual's personal analysis, evaluation, reasoning, interpretation and judgment on the nature, value, authenticity and accuracy of the knowledge learned. Then making reasonable decisions on this basis is a purposeful and meaningful process of self-regulation judgment, reflection, reasoning and strategy for nurses in view of complex clinical nursing problems. It is also a necessary thinking and judgment method for nurses to correctly reflect and choose in the face of dynamic and complex clinical environment. Although the combined teaching mode has no obvious advantages in seeking the truth ( $t = 2.985$ ,  $P > 0.05$ ), it has significantly improved in open thinking, analytical ability, systematic ability, self-confidence, thirst for knowledge and cognitive maturity.

The results of this study show that both teaching modes have a positive impact on the critical ability of pediatric clinical nursing students, and the positive impact of video feedback combined with situational simulation teaching mode is greater. Nursing is an independent discipline. Clinical nursing work has also matured and began to develop towards diversification and complexity. In this situation, nursing workers should not only fully master theoretical knowledge, but also be able to quickly and accurately analyze and identify problems and formulate solutions. Critical thinking is a purposeful and continuous thinking process of induction, deduction and reasoning. Critical thinking ability is an important index to measure nurses' overall nursing ability and an important content of clinical comprehensive skill training.

## IV. CONCLUSION

Video feedback combined with situational simulation teaching mode can improve the theoretical achievement and practical ability of pediatric clinical nursing students, and lay a foundation for engaging in pediatric clinical work. Video feedback combined with situational simulation teaching mode can improve pediatric clinical nursing students' autonomous learning ability, initiative and critical thinking ability. Video feedback combined with situational simulation teaching model can achieve good clinical teaching satisfaction. Video feedback combined with situational simulation teaching mode can improve the comprehensive ability of pediatric nurses, which is worth popularizing in pediatric clinical nursing teaching.

## ACKNOWLEDGEMENTS

This research was supported by Henan Medical Education Research Project: Deepening the construction and practice of talent training mode and curriculum system of nursing specialty and professional group based on "1 + X" certificate (Grant No. Wjlx2020230) and Henan Educational Science Planning Project: Research on the mixed teaching mode of "online + offline and school-

enterprise cooperation" of higher vocational college midwifery majors under the influence of COVID-19. (Grant No. 2020YB0503).

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